

$$\textcircled{1} \quad -\sqrt{-36} \\ -6i$$

Apr 30-6:05 PM

$$\log_{\omega} Q = 12 \\ \omega^{12} = Q$$

Apr 30-6:07 PM

$$\textcircled{3} \quad (8+7i)(8-8i) \\ 64-64i+56i-56i^2 \\ 64-8i+56 \\ 120-8i$$

Apr 30-6:08 PM

$$\textcircled{4} \quad 3i \quad -3i \\ -5-\sqrt{6} \quad -5+\sqrt{6}$$

Apr 30-6:09 PM

$$\textcircled{5} \quad A = P\left(1 + \frac{r}{n}\right)^{nt} \\ = 14000\left(1 + \frac{.12}{2}\right)^{(2 \cdot 6)} \\ = \$28,170.75$$

Apr 30-6:11 PM

$$\textcircled{6} \quad y = -11x^2 + 350x \\ = -11(24)^2 + 350(24) \\ = 2064 \text{ units}$$

Apr 30-6:13 PM

$$\begin{aligned} \textcircled{7} \quad h(t) &= -16t^2 + 33.1t + 124.26 \\ &= -16(.9)^2 + 33.1(.9) + 124.26 \\ &= 141.09 \end{aligned}$$

Apr 30-6:15 PM

$$\begin{aligned} \textcircled{8} \quad A(t) &= 400e^{-0.035t} \\ &= 400e^{-0.035 \cdot 30} \\ &= 140 \end{aligned}$$

Apr 30-6:16 PM

$$\begin{aligned} \textcircled{9} \quad V &= \frac{K \cdot T}{P} & V &= \frac{13 \cdot 220}{20} \\ 20 \cdot 91.0 &= \frac{K \cdot 140 \cdot 20}{20} & & = 143 \\ \frac{1820}{140} &= \frac{140K}{140} \\ 13 &= K \end{aligned}$$

Apr 30-6:18 PM

$$\begin{aligned} \textcircled{10} \quad m &= -\frac{5}{9} \quad (5, 3) \\ y &= mx + b \\ 3 &= -\frac{5}{9} \cdot 5 + b \\ 3 &= -\frac{25}{9} + b \\ +\frac{25}{9} & \quad +\frac{25}{9} \\ \frac{52}{9} &= b \end{aligned}$$

Apr 30-6:20 PM

$$\begin{aligned} \textcircled{11} \quad \log_a x^2 y z^2 \\ \log_a x^2 + \log_a y + \log_a z^2 \\ 2\log_a x + \log_a y + 2\log_a z \end{aligned}$$

Apr 30-6:22 PM

$$\begin{aligned} \textcircled{12} \quad A &= P(1 + \frac{r}{n})^{nt} \\ 47900 &= 4100(1 + \frac{0.6}{4})^{4t} \end{aligned}$$

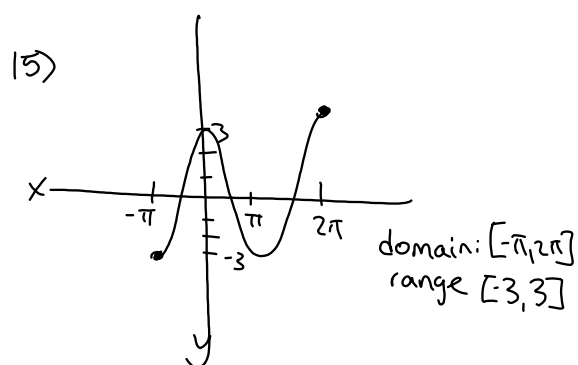
Apr 30-6:24 PM

$$\begin{aligned}
 13) \quad & x^2 - 12x + 32 = 0 \\
 & (x-4)(x-8) = 0 \\
 & x-4=0 \quad x-8=0 \\
 & a=1 \quad b=-12 \quad c=32 \\
 & \boxed{x=4 \quad x=8}
 \end{aligned}$$

Apr 30-6:28 PM

$$\begin{aligned}
 14) \quad & K \cdot T = \ln 2 \\
 & \frac{K \cdot 7.79}{7.79} = \frac{\ln 2}{7.79} \\
 & K = 8.9\%
 \end{aligned}$$

Apr 30-6:34 PM



Apr 30-6:36 PM

$$16) \quad \frac{x^{-3}y''}{z^{-7}} = \frac{y''z^7}{x^3}$$



Apr 30-6:38 PM

Apr 30-6:37 PM

$$f(x) = x + 3 = 3 + 3 = 6$$

$$g(x) = x + 1 = 3 + 1 = 4$$

$$(f+g)(3)$$

$$f(3) + g(3)$$

$$6 + 4$$

$$10$$

Apr 30-6:40 PM

$$(18) f(x) = 7 - x$$

$$y = 7 - x$$

$$x = 7 - y$$

$$-7 \rightarrow$$

$$\frac{x-7}{-1} = \frac{-y}{-1}$$

$$-x + 7 = y$$

$$f^{-1}(x) = 7 - x$$

Apr 30-6:41 PM

$$19) \log y$$

$$61 \log y$$

Apr 30-6:42 PM

$$(20) g(x) = \frac{x+8}{x-9}$$

$$x-9=0$$

$$\boxed{x=9}$$

Vertical Asymptotes

Zeros of denominator

Apr 30-6:44 PM

$$-3, -4, 4$$

$$(x+3)(x+4)(x-4)$$

Apr 30-6:48 PM

$$(22) (4x^2 + 2x - x^3 + 1) - (7x^2 - 7x - x^3 + 6)$$

$$4x^2 + 2x - x^3 + 1 - 7x^2 + 7x + x^3 - 6$$

$$-3x^2 + 9x - 5$$

Apr 30-6:49 PM

$$23) \log_{10} 100,000$$

$$\log(100,000)/\log 10$$

Apr 30-6:50 PM

$$24) \log_b xy$$

$$\log_b x + \log_b y$$

Apr 30-6:51 PM

$$25) \log_{10} x = 3$$

$$10^3 = x$$

$$1000 = x$$

Apr 30-6:51 PM

$$26) \log 3x = \log 2 + \log (x+3)$$

$$\log 3x = \log 2(x+3)$$

$$3x = 2(x+3)$$

$$3x = 2x + 6$$

$$\begin{array}{r} -2x \\ \hline x = 6 \end{array}$$

Apr 30-6:52 PM

$$A = P \left(1 + \frac{r}{n}\right)^{nt}$$

$$27) 14000 \quad t=15 \quad r=12\% \quad \text{semiannually}$$

$$80,408.88$$

Apr 30-6:53 PM

$$f(x) = 3x + 8$$

$$g(x) = (5x - 1)$$

$$(f \circ g)(x)$$

$$3(5x - 1) + 8$$

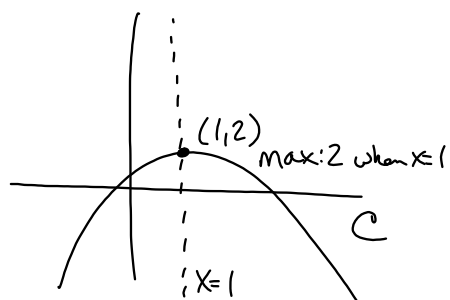
$$15x - 3 + 8$$

$$15x + 5$$

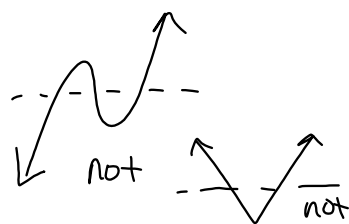
Apr 30-6:56 PM

$$\begin{array}{r}
 29) -2x + 4y = 12 \\
 +2x \quad +2x \\
 \hline
 4y = 2x + 12 \\
 \frac{4y}{4} = \frac{2x}{4} + \frac{12}{4} \\
 y = \frac{1}{2}x + 3 \\
 C. \frac{1}{2} (0, 3)
 \end{array}$$

Apr 30-6:56 PM



Apr 30-6:57 PM



Apr 30-6:58 PM

$$\begin{array}{l}
 32) f(x) = \frac{13}{16-x} \\
 (-\infty, 16) \cup (16, \infty) \\
 D.
 \end{array}$$

Apr 30-6:59 PM

$$\begin{array}{l}
 35) (x-5)(5x-3) \\
 5x^2 - 3x - 25x + 15 \\
 5x^2 - 28x + 15
 \end{array}$$

Apr 30-7:00 PM

$$\begin{array}{l}
 36) (6-2i) + (4+8i) \\
 10 + 6i
 \end{array}$$

Apr 30-7:03 PM

Horizontal Asymptotes

- ① deg num < deg den $\frac{x^3 + 5x^2 + 2}{x^4 + 8x^3 + 7}$
 $y = 0$
- ② deg num = deg den $\frac{2x^2 + 5x + 3}{3x^2 + 8x}$
 $y = \frac{a}{b}$
 $y = \frac{2}{3}$
- ③ deg num > deg den
 NO Horiz

Apr 30-7:04 PM

3B) f(x)

Apr 30-7:08 PM

$$\begin{array}{l} (x+1)^2(x-1) \\ \downarrow \\ -1 \text{ mult } 2 \\ (x-8)^4 \quad 1 \text{ mult } 1 \\ 8 \text{ mult } 4 \end{array} \quad \begin{array}{l} (x+7)^5 \\ -7 \text{ mult } 5 \end{array}$$

Apr 30-7:09 PM

4b) $(4, -2)(2, 6)$

$$\frac{y_2 - y_1}{x_2 - x_1} = \frac{6 - (-2)}{2 - 4} = \frac{8}{-2} = -4$$

Apr 30-7:09 PM

$$\log_a x = b \quad a^b = x$$

A. $\log_4 64 = 3 \quad 4^3 = 64$

Apr 30-7:10 PM

$$y = -2x - 7$$

$$\boxed{x = -2y - 7}$$

Apr 30-7:11 PM

$$45) \textcircled{B} \log_a q - \log_a r$$

$$\log_a q^3 - \log_a r$$

$$\log_a \frac{q^3}{r}$$

Apr 30-7:12 PM

$$2x^3 + 3x^2 + 4x - 10 \div x + 1$$

$$\begin{array}{r} -1 \\ 2 \\ \underline{-2 } \\ 4 \\ \underline{-4 } \\ 0 \\ \underline{-10 } \\ -10 \end{array}$$

B

Apr 30-7:13 PM

$$f(x) = x^3 - 8x^2 + 17x - 30; 6$$

$$\begin{array}{r} 6 \\ \underline{6 } \\ 1 \\ \end{array}$$

$$\Rightarrow x^2 - 2x + 5$$

D. $1+2i, 1-2i$

Apr 30-7:14 PM

$$49) 5, i, -i$$

$$(x-5)(x-i)(x+i)$$

$$(x-5)(x^2 + ix - ix - i^2)$$

$$(x-5)(x^2 + 1)$$

C $x^3 - 5x^2 + x - 5$

Apr 30-7:16 PM

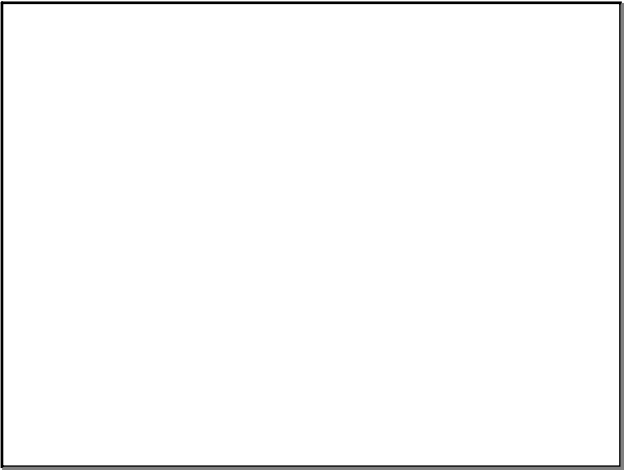
$$50) q^{2x} = q^{17.4}$$

$$\frac{2x}{2} = \frac{17.4}{2}$$

$$x = 8.7$$

Apr 30-7:17 PM

Apr 30-6:51 PM



Apr 30-6:49 PM